

# The “Black Hull” Fleet

*Multi-function assets for multi-mission duty.*

by CDR GREGORY TLAPA  
Chief, U.S. Coast Guard Visual Navigation Division



## Black, White, Red

While all Coast Guard afloat assets are multi-mission platforms, they are loosely grouped into three communities—the black hull fleet, white hull fleet, and red hull fleet. As the names suggest, the hulls are painted those colors and denote each asset’s primary mission function:

- Black hull—aids to navigation,
- White hull—maritime law enforcement and other safety-at-sea missions,
- Red hull—icebreaking.

“Primary” being the operative word: As Coast Guard missions have expanded and evolved, so have the capabilities of its assets. Today the terms serve more to describe the personnel aboard the assets, engendering camaraderie within the communities and spurring friendly competition among them.

To fulfill its multi-mission duties, the Coast Guard's black hull fleet or “buoy tenders” don't just tend buoys—these vessels are routinely employed in all of the Coast Guard's statutory mission areas, and carry specialized equipment to fulfill those functions.

For example, as a result of the *Exxon Valdez* oil spill in 1989, the Oil Pollution Act of 1990 mandated that they be outfitted with an onboard spilled oil recovery system (SORS) comprised of outriggers, booms, hydraulic skimming equipment, and product storage vessels.

In addition to “normal” operational training, seagoing buoy tender crews participate in annual training and mock exercises with this equipment. While the smaller coastal buoy tenders are not outfitted with SORS equipment, they also conduct annual training and mock exercises using pre-staged vessel of opportunity skimming system gear, and all crews receive hazardous waste operations and emergency response training.

Thanks to such training and exercises, these crews quickly integrated into the response to the sinking of

Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE <b>2011</b>		2. REPORT TYPE		3. DATES COVERED <b>00-00-2011 to 00-00-2011</b>	
4. TITLE AND SUBTITLE <b>The 'Black Hull' Fleet: Multi-function assets for multi-mission duty.</b>				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) <b>U.S. Coast Guard, Visual Navigation Division, 2100 2nd Street SW, Washington, DC, 20593-7580</b>				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT <b>Approved for public release; distribution unlimited</b>					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT <b>Same as Report (SAR)</b>	18. NUMBER OF PAGES <b>6</b>	19a. NAME OF RESPONSIBLE PERSON
a. REPORT <b>unclassified</b>	b. ABSTRACT <b>unclassified</b>	c. THIS PAGE <b>unclassified</b>			

the mobile offshore drilling unit *Deepwater Horizon* in the Gulf of Mexico.

### Cutters Deployed

In the largest environmental response mobilization of its buoy tender fleet, the Coast Guard deployed eight of its 16 seagoing buoy tenders (WLBs) and four of 14 coastal buoy tenders (WLMs) to this effort, comprising nearly half of the Coast Guard's heavy-lift capability for aids to navigation operations.

While this incident is, as of this writing, still undergoing investigation and review, we can share some of the black hull fleet's operational successes and lessons learned.

### Early Lessons

The WLBs and WLMs deployed to the Gulf from nearly every Coast Guard district and coordinated with air assets to identify, track, and pursue oil patches and rule out areas that had no oil.

As with any unprecedented mission, field commanders refined tactics and procedures to improve efficiency. Recognizing the speed-distance-time limitations of surface assets and making calculated risk-based decisions for daily force deployment became a skill set unto itself—one that was routinely complicated by weather, ocean currents, and competing operational demands.

For example, initial operations employed a towed storage vessel or "sea slug" to contain recovered oily water. True to its name, this vessel contributed to sluggish cutter maneuverability and transit speed. Crews then employed onboard storage tanks, which were less cumbersome to deploy and tend, but also had limited capacity. As the response continued to evolve, mission commanders eventually deployed dedicated alongside tank barges, which increased recovered oil storage capacity and on-scene oil skimming time.

## The Black Hulls

### Multi-mission Assets

In addition to aids to navigation missions, these cutters are also deployed for:

- **Drug Interdiction.** March 2009, in the largest marijuana seizure by a USCG buoy tender, CGC *Aspen* intercepted a "go-fast" vessel loaded with eight tons of marijuana.
- **Fisheries Enforcement.** May 2009, CGC *Hickory* issued a major fisheries violation in the Nearshore Bristol Bay Trawl Closure Area.
- **Homeland Security.** September 2009, CGC *Osage* conducted on-scene waterborne security for the G-20 Summit.
- **Humanitarian Response.** January 18, 2010, CGC *Oak* was the first military ship to moor in Port-Au-Prince, Haiti, for earthquake response.
- **Environmental Response.** Mass mobilization of the buoy tender fleet to the 2010 *Deepwater Horizon* oil spill.

### Maintenance and Decontamination

Shore-based vessel support and skimmer equipment repair teams drawn from Coast Guard headquarters, naval engineering support units, and strike force commands deployed to key Gulf ports and augmented cutter personnel during logistics stops and maintenance periods. Decontamination activities to conform to the Clean Water Act and other environmental and operational standards were ongoing at the time of this writing.

### The Continuing ATON Mission

As the response in the Gulf continued beyond projected timelines, senior

Coast Guard leaders were concerned that the absence of the buoy tenders would negatively impact the overall aids to navigation (ATON) infrastructure. In the end, however, the nationwide aid availability rate remained nearly constant throughout the deployment, which poses the question: *How can this be?*

Through a series of strategic initiatives and efficiency improvements over the last decade, the ATON program has dramatically improved hardware reliability and reduced the cutter resource hours needed to maintain the system.

### Improvements in Efficiency and Technology

For example, seagoing buoy tenders have methodically transitioned from primary use as dedicated aids to navigation platforms to multi-mission assets. In the past, nearly 60 percent of their operational hours were devoted to performing ATON. In fiscal year 2009, however, these vessels spent only 39 percent of their operating hours on these duties, with the remaining 61 percent dispersed across other mission areas.

The coastal buoy tenders have experienced similar effects in mission employment, and expanded shore-based aids to navigation teams have also greatly improved overall mission response.



Additionally, though the buoys and beacons along the U.S. coast look much the same as they did 30 years ago, there has also been a systematic transformation of aids to navigation equipment and hardware and efficiency improvements including:

- differential GPS positioning,
- increased use of solar power,
- transition from incandescent lighting systems to light-emitting diodes,
- use of self-contained systems,
- new buoy coating systems.

While many of these initiatives may have gone unnoticed by the shipping industry and boating public, the result is greatly improved Coast Guard operational efficiency.

Furthermore, the Coast Guard employs a multi-tiered management philosophy to maintain ATON infrastructure so that each aid and waterway can be serviced by several types of Coast Guard assets. This means that a channel may be marked with large ocean and coastal buoys maintained by a coastal or seagoing buoy tender, while an aids to navigation team maintains the waterway's smaller buoys, ranges, and fixed aids.

#### **Left Watching Properly**

While the Coast Guard's aid availability rate remained constant despite a nearly four-month absence of half the seagoing buoy tender fleet, it is uncertain how much longer we could have maintained an acceptable rate.

There were contingency plans in place for discrepancies that could not be corrected by the shore-based aids to navigation teams while the primary servicing unit (the buoy tender) was absent, but it was expected that some discrepancies would take longer to correct.

Additionally, while short-term absences can be absorbed, the combination of the continued unavailability of a large portion of the buoy tender fleet *and* a major event such as a hurricane could have resulted in a mass failure of a particular waterway or ATON system.

Fortunately this did not occur, and Coast Guard personnel were able to keep the ATON infrastructure watching properly during this unprecedented deployment.

#### **About the author:**

*CDR Tlapa is a graduate of the Coast Guard Academy, holds a master's degree in civil engineering from the University of Illinois, and is a registered professional engineer in the state of Alaska. His operational assignments include deck watch officer aboard USCG cutter Acacia, executive officer of USCG cutters, Red Beech and Cypress, and commanding officer of USCGC Hickory. He is currently chief of the Visual Navigation Division at Coast Guard headquarters.*



CGC Juniper's spilled oil recovery system.



U.S. Coast Guard maritime safety and security team divers climb aboard Coastal Buoy Tender Abbie Burgess.



## The "Black Hull" Fleet



### Seagoing Buoy Tenders

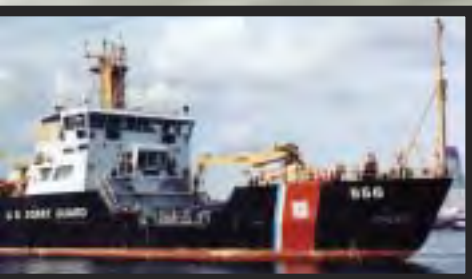
COMMISSIONED: 1996-2004

*Juniper* (WLB 201)  
*Willow* (WLB 202)  
*Kukui* (WLB 203)  
*Elm* (WLB 204)  
*Walnut* (WLB 205)  
*Spar* (WLB 206)  
*Maple* (WLB 207)  
*Aspen* (WLB 208)  
*Sycamore* (WLB 209)  
*Cypress* (WLB 210)  
*Oak* (WLB 211)  
*Hickory* (WLB 212)  
*Fir* (WLB 213)  
*Hollyhock* (WLB 214)  
*Sequoia* (WLB 215)  
*Alder* (WLB 216)

### Coastal Buoy Tenders

COMMISSIONED: 1996-2000

*Ida Lewis* (WLM 551)  
*Katherine Walker* (WLM 552)  
*Abbie Burgess* (WLM 553)  
*Marcus Hanna* (WLM 554)  
*James Rankin* (WLM 555)  
*Joshua Appleby* (WLM 556)  
*Frank Drew* (WLM 557)  
*Anthony Petit* (WLM 558)  
*Barbara Mabrity* (WLM 559)  
*William Tate* (WLM 560)  
*Harry Claiborne* (WLM 561)  
*Maria Bray* (WLM 562)  
*Henry Blake* (WLM 563)  
*George Cobb* (WLM 564)



### Icebreaking Tugs

COMMISSIONED: 1978-1987

*Katmai Bay* (WTGB 101)  
*Bristol Bay* (WTGB 102)  
*Mobile Bay* (WTGB 103)  
*Biscayne Bay* (WTGB 104)  
*Neah Bay* (WTGB 105)  
*Morro Bay* (WTGB 106)  
*Penobscot Bay* (WTGB 107)  
*Thunder Bay* (WTGB 108)  
*Sturgeon Bay* (WTGB 109)



CGC *Katmai Bay* breaks ice to service an extinguished ice buoy.

### Inland Construction Tenders

#### 160-foot Inland Construction Tenders

COMMISSIONED: 1976

*Pamlico* (WLIC 800)  
*Hudson* (WLIC 801)  
*Kennebec* (WLIC 802)  
*Saginaw* (WLIC 803)

#### 100-foot Inland Construction Tender

COMMISSIONED: 1944

*Smilax* (WLIC 315)

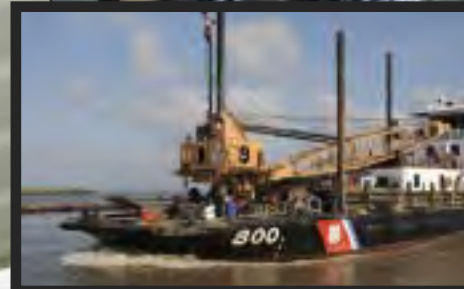
#### 75-foot Inland Construction Tenders

COMMISSIONED: 1962-1965

*Anvil* (WLIC 75301)  
*Hammer* (WLIC 75302)  
*Sledge* (WLIC 75303)  
*Mallet* (WLIC 75304)  
*Vise* (WLIC 75305)  
*Clamp* (WLIC 75306)  
*Hatchet* (WLIC 75309)  
*Axe* (WLIC 75310)



DHS Secretary Janet Napolitano observes aids to navigation operations aboard the Inland Construction Tender *Anvil*.







The Inland Buoy Tender, Coast Guard Cutter *Bayberry*, enforces a safety zone while the U.S. Navy "Blue Angels" perform at Seattle's 2003 Seafair.



## Inland Buoy Tenders

### 100-foot Inland Buoy Tenders

COMMISSIONED: 1944

*Bluebell* (WLI 313)

COMMISSIONED: 1963

*Buckthorn* (WLI 642)

### 65-foot Inland Buoy Tenders

COMMISSIONED: 1954

*Bayberry* (WLI 65400)

*Elderberry* (WLI 65401)

## River Buoy Tenders

### 75-foot River Buoy Tenders

COMMISSIONED: 1964-1970

*Gasconade* (WLR 75401)

*Muskingum* (WLR 75402)

*Wyaconda* (WLR 75403)

*Chippewa* (WLR 75404)

*Cheyenne* (WLR 75405)

*Kickapoo* (WLR 75406)

*Kanawha* (WLR 75407)

*Patoka* (WLR 75408)

*Chena* (WLR 75409)

*Wedge* (WLR 75307)

COMMISSIONED: 1990

*Kankakee* (WLR 75500)

*Greenbrier* (WLR 75501)

### 65-foot River Buoy Tenders

COMMISSIONED: 1960-1962

*Ouachita* (WLR 65501)

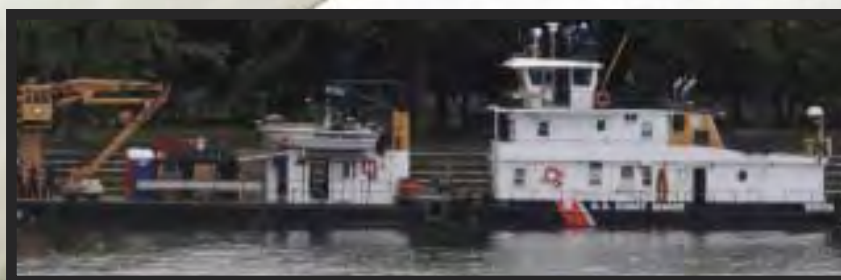
*Cimarron* (WLR 65502)

*Obion* (WLR 65503)

*Scioto* (WLR 65504)

*Osage* (WLR 65505)

*Sangamon* (WLR 65506)



Petty Officer Jesse Biggers pilots CGC *Kanawha's* small work skiff.





## Small Harbor Tugs

COMMISSIONED: 1962-1967

*Capstan* (WYTL 65601)

*Chock* (WYTL 65602)

*Tackle* (WYTL 65604)

*Bridle* (WYTL 65607)

*Pendant* (WYTL 65608)

*Shackle* (WYTL 65609)

*Hawser* (WYTL 65610)

*Line* (WYTL 65611)

*Wire* (WYTL 65612)

*Bollard* (WYTL 65614)

*Cleat* (WYTL 65615)

## AN AGING FLEET

Although the design life of these cutters is typically 30 years, the average cutter in the black hull fleet is 32 years old.



Petty Officer Marc Snyder takes the helm of the Small Harbor Tug *Capstan* during an ice breaking evolution in the northern Chesapeake Bay.

